CLAIMS

I claim:

1. An optoelectronic module, comprising:

a main body including material having high thermal conductivity for dissipating heat;

a flexible circuit conforming to the main body;

a wafer-level package attached to the main body and electrically coupled to the flexible circuit, the wafer-level package including at least one optoelectronic device having an active region; and

an alignment element attached to the wafer-level package, the alignment element having features shaped to match with an optical fiber connector and align the active region of the optoelectronic device to an optical fiber.

2. A module as in claim 1, further comprising:

a fiber receptacle attached to the main body for coupling with an optical fiber connector.

3. A module as in claim 2, wherein the alignment element mates with a ferrule on the optical fiber connector.

4. A module as in claim 3, further comprising:

an auxiliary component attached to the main body, the auxiliary component coupled to the wafer-level package through the flexible circuit.

5. A module as in claim 4, further comprising a cover over the auxiliary component and attached to the main body.

6. A module as in claim 2, wherein the fiber receptacle is a mini MT-RJ connector.

7. A module as in claim 2, wherein the fiber receptacle is of a type selected from the group consisting of MPO, MT-RJ, FC, LC, SC, and ST connectors.

8. A module as in claim 1, the wafer-level package including:

a sub-mount having a first surface and a gasket formed on the first surface, wherein the optoelectronic device is attached to the first surface within the gasket; and

a lid attached to the sub-mount at the gasket, forming an enclosure containing the optoelectronic device.

9. A module as in claim 8, wherein the sub-mount comprises a first wafer and the lid comprises a second wafer.

10. A module as in claim 9, the wafer-level package further including:

a driver formed within the sub-mount for driving the optoelectronic device.

11. A module as in claim 9, the wafer-level package further including:

an amplifier formed within the sub-mount for amplifying a signal from the optoelectronic device.

12. A module as in claim 9, wherein the optoelectronic device is a light-emitting device.

13. A module as in claim 9, wherein the optoelectronic device is a light detector.

14. A module as in claim 13, wherein the optoelectronic device is a monitor photodiode.

15. A module as in claim 13, wherein the optoelectronic device is a PIN diode.

16. A module as in claim 9, wherein the wafer-level package includes a light-emitting device and a light-detector.

17. A module as in claim 9, wherein

the optoelectronic device has an active region, and

the lid of the wafer-level package includes an integrated lens aligned with the active region of the optoelectronic device.

18. A module as in claim 9, further comprising

a lens formed over the active region of the optoelectronic device.

19. A module as in claim 1, wherein

the features of the alignment element are posts.

20. A module as in claim 19, wherein

the alignment element has a sloped surface to reduce back reflections.